AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1. (Currently Amended) A method of separating a negatively charged target biopolymer from other biopolymers which are not negatively charged or which are larger than said target biopolymer, comprising the steps of:

partitioning a container into a first ~~solution~~ buffer chamber, initially containing said target biopolymer and other biopolymers, and a second ~~solution~~ buffer chamber, for preserving separated target biopolymer, with the use of a partition;

moving said target biopolymer from within said first ~~solution~~ buffer chamber through said partition into said second ~~solution~~ buffer chamber using electrophoresis; and

separating said target biopolymer from ~~said~~ a buffer in said second ~~solution~~ buffer chamber,

wherein said partition is a gel, a pillar array or a porous filter,

wherein said target biopolymer is a nucleic acid or protein, and

wherein said other biopolymers are nucleic acids and/or proteins.

2. (Currently Amended) A method of separating a negatively charged target biopolymer from other biopolymers which are smaller than said target biopolymer, comprising the steps of:

partitioning a container into a first ~~solution~~ buffer chamber, initially containing said target biopolymer and said other biopolymers, a second ~~solution~~ buffer chamber, for preserving said other biopolymers, and a third ~~solution~~ buffer chamber, for preserving said target biopolymer,

from each other with the use of a partition;

moving said other biopolymers from within said first ~~solution~~ buffer chamber through said partition and into said second ~~solution~~ buffer chamber using a first electrophoresis device,

moving said target biopolymer from within said first ~~solution~~ buffer chamber into said partition using said first electrophoresis device, then

moving said target biopolymer from within said partition into said third ~~solution~~ buffer chamber using a second electrophoresis device; and

separating said target biopolymer from a buffer in said third ~~solution~~ buffer chamber,

wherein said target biopolymer is a nucleic acid or protein, and

wherein said other biopolymers are nucleic acids and/or proteins.

3. (Previously Presented) The biopolymer separation method of claim 2, wherein said partition is a gel, a pillar array or a porous filter.

4. (Withdrawn/Currently Amended) A biopolymer separation apparatus, wherein a negatively charged target biopolymer is separated from among biological samples, comprising:

a first solution containing said biological samples;

a second solution for preserving separated biopolymers;

an electrophoresis container carrying a partition to partition said first solution from said second solution;

first positive and negative electrodes provided to move said negatively charged

biopolymer from within said first solution through said partition into said second solution using electrophoresis; and

a power supply for applying positive and negative voltages to said positive and negative electrodes respectively,

wherein biopolymer separation can be performed by applying voltages to said electrodes and moving said target biopolymer from within said first solution through said partition to said second solution.

5. (Withdrawn/Currently Amended) The biopolymer separation apparatus of claim 4, wherein a third solution is carried in said container in order to contact said partition in a direction different from directions of said first solution and said second solution and to preserve said biopolymer moved through said partition, comprising:

second positive and negative electrodes for electrophoresis which are provided to move said negatively charged biopolymer from said partition into said third solution using electrophoresis; and

a power supply for applying positive and negative voltages to said positive and negative electrodes respectively,

wherein biopolymer separation can be performed by moving said target biopolymer into said second or third chamber through the switching of movement directions caused by electrophoresis.

6. (Withdrawn) The biopolymer separation apparatus of claim 4 or claim 5, wherein said partition is a gel, a pillar array or a porous filter.

7. (Currently Amended) A biopolymer separation method, wherein a negatively charged target biopolymer fixed to a magnetic bead is separated from other biopolymers, comprising the steps of:

partitioning a container into a first ~~solution~~ buffer chamber, initially containing said target biopolymer fixed to said magnetic bead and said other biopolymers, a second ~~solution~~ buffer chamber, for preserving separated other biopolymers, and a third ~~solution~~ buffer chamber, for preserving said separated target biopolymer fixed to said magnetic bead, from each other with the use of a partition;

moving said target biopolymer fixed to said magnetic bead and said other biopolymers from within said first ~~solution~~ buffer chamber into said partition using electrophoresis;

while said target biopolymer fixed to said magnetic bead and said other biopolymers are in said partition, moving said target biopolymer fixed to said magnetic bead [[,]] into said third ~~solution~~ buffer chamber using magnetophoresis; and

separating said target biopolymer fixed to said magnetic bead from a buffer in said third ~~solution~~ buffer chamber,

wherein said target biopolymer is a nucleic acid or protein, and

wherein said other biopolymers are nucleic acids and/or proteins.

8. (Previously Presented) The biopolymer separation method of claim 7, wherein said partition is a gel, a pillar array or a porous filter.

9. (Withdrawn) A biopolymer separation apparatus, wherein a negatively charged target biopolymer fixed to a magnetic bead is separated from among biological samples, comprising:

a first solution containing said biological samples;

a second solution for preserving separated biopolymers;

a third solution for preserving a separated target biopolymer fixed to a magnetic bead;

a container carrying a partition to partition these three solutions from each other;

positive and negative electrodes provided in said container to move negatively charged biopolymers from within said first solution into said partition and said second solution using electrophoresis;

a power supply to apply positive and negative voltages to said positive and negative electrodes respectively; and

a magnetic field generation means wherein a magnetic field is generated in order to move said target biopolymer fixed to a magnetic bead, which is in transit in said partition using electrophoresis, into said third solution using magnetophoresis,

wherein biopolymer separation can be performed by moving said target biopolymer fixed to a magnetic bead into said third solution using electrophoresis and magnetophoresis.

10. (Withdrawn) The biopolymer separation apparatus of claim 9, wherein said partition is a

gel, a pillar array or a porous filter.

11. (Withdrawn) The biopolymer separation apparatus of claim 9 or claim 10, wherein an electromagnet, an electromagnetic coil, or a permanent magnet is used as said magnetic field generation means.